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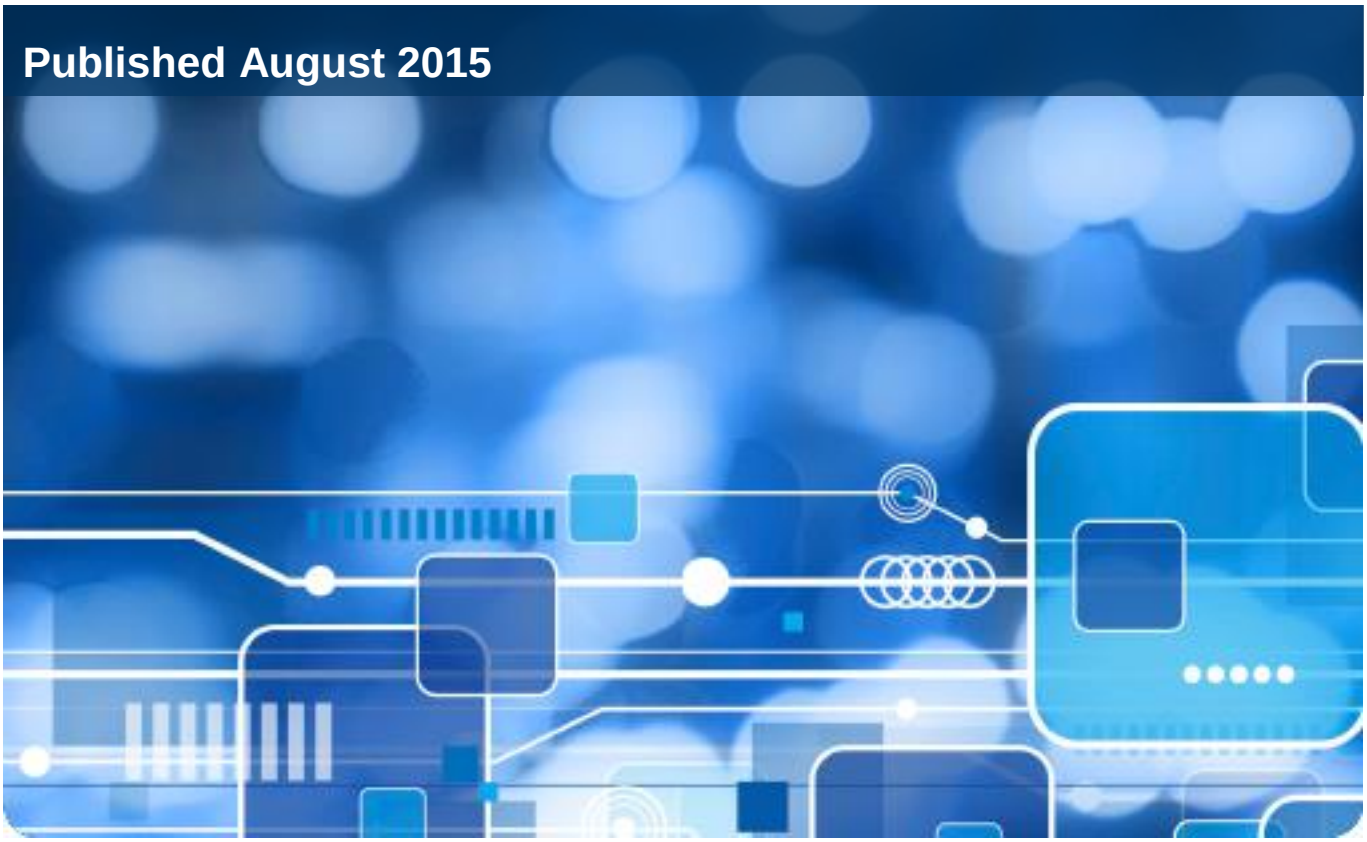
HRG4+ 2016/17 Engagement Grouper

User Manual

Published August 2015



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Quick Start

This section is intended to provide a brief overview of downloading, installing and starting to use the HRG4+ Grouper application. For more detailed information, you are advised to read the whole manual.

Download and Install the Grouper

- Go to www.hscic.gov.uk/casemix/downloads.
- Click on Payment.
- There may be more than one version available. Older versions are on the archive pages.
- Click on the Grouper application link in the Download section at the right of the screen.
- Save the Zip file to an appropriate location on your computer.
- Open the Zip file and extract the installer.
- Double-click the installer file and follow the installation setup wizard.

Walkthrough Using Sample Data

The following walkthrough describes processing a sample Admitted Patient Care (APC) input file, available from the Casemix website.

- Download the “HRG4 Admitted Patient Care Sample Test Data” file from this page: http://www.hscic.gov.uk/casemix/general.
- Open the Grouper application.

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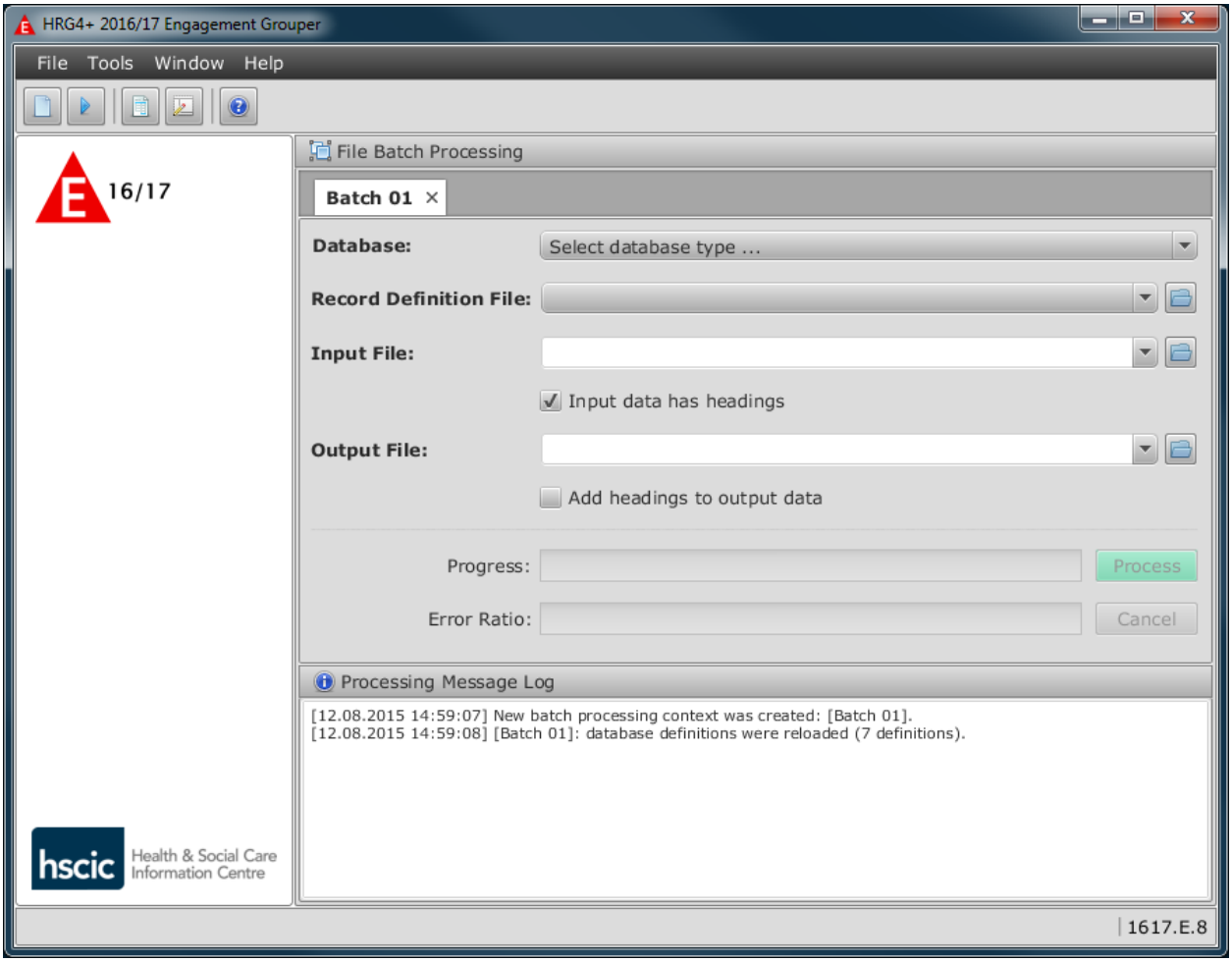

- Select **Admitted Patient Care (APC) E1617** in the **Database** drop-down list. Other grouping types available can be seen in the drop down.
- Click the browse button (folder icon) next to the Record Definition File drop-down list.
- In the **Open RDF File...** dialog box, browse for the sample RDF. The sample RDFs are located in the Grouper's installation folder in a sub-folder called `sample_rdf`.
- Open the file `HRG4+_sample_APC.rdf`. An alternative sample RDF file should be used for other grouping database selections. The database selection and RDF file should match.
- Click the browse button (folder icon) to the right of the **Input File** field.
- In the **Open Input File...** dialog box, browse to and select the downloaded sample input file.
- Ensure that the **Input data has headings** box is checked.
- Click the browse button (folder icon) next to the **Output File** field.
- In the **Save Output File...** dialog box browse to the folder containing the input file and type `output_apc_sample` (or anything similarly appropriate) in the **File name** box.
- Click **Save**. The path and filename of the output file are displayed in the **Output File** field.
- Ensure that the **Add headings to output data** box is checked.

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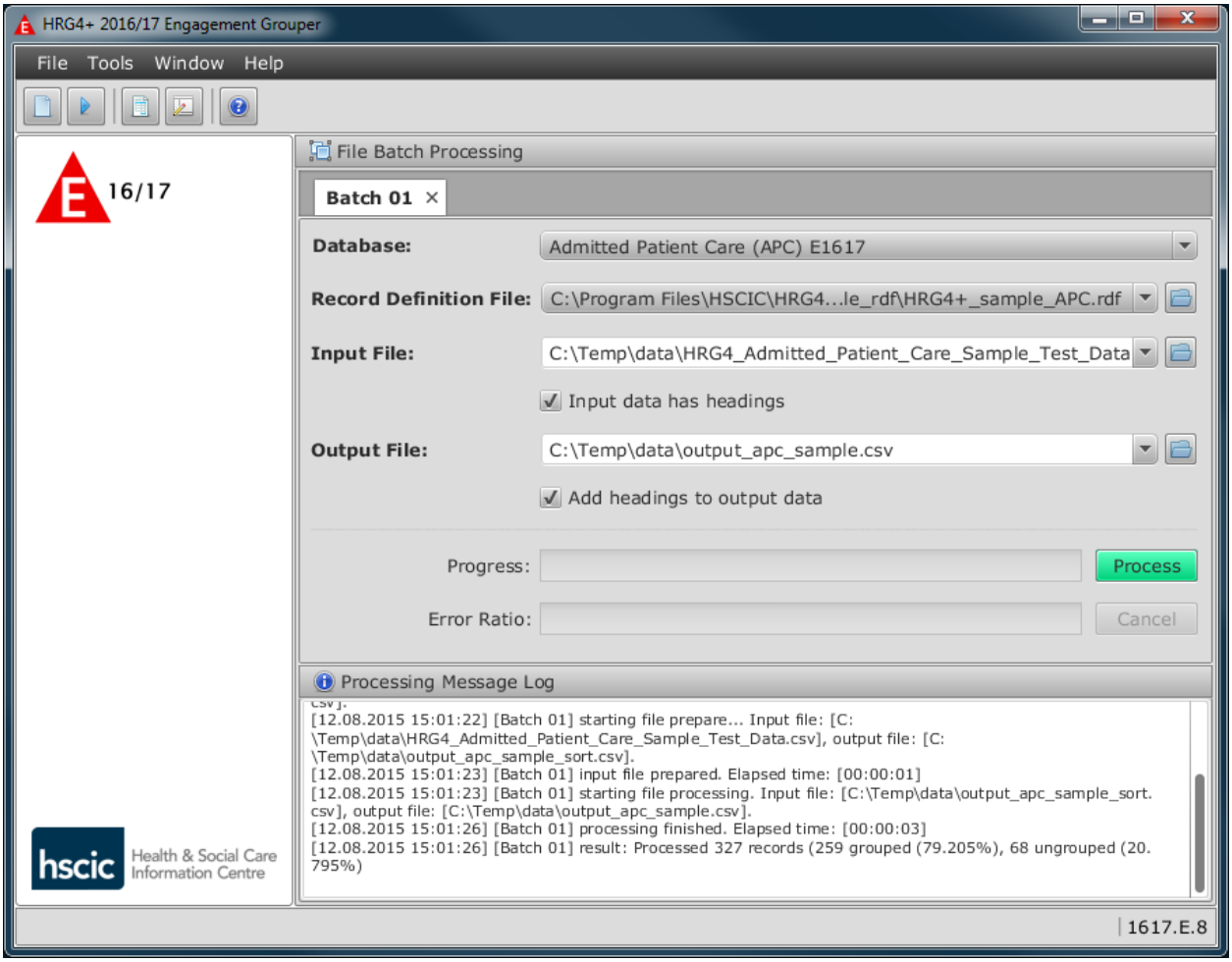
- Click the **Process** button.
- When finished, the log display area shows information about the grouping session, including the number of records grouped. These details can also be found in the file `hrg.log`. Depending on how Windows is configured on your machine this may be in the Grouper's installation folder, or a folder called `hrg4-grouper-profile-RC1415` in your user profile.


HRG4+ 2016/17 Engagement Grouper
File Tools Window Help
16/17
File Batch Processing
Batch 01
Database:
Admitted Patient Care (APC) E1617
Record Definition File:
C:\Program Files\HSCIC\HRG4...le_rdf\HRG4+_sample_APC.rdf
Input File:
C:\Temp\data\HRG4_Admitted_Patient_Care_Sample_Test_Data
Input data has headings
Output File:
C:\Temp\data\output_apc_sample.csv
Add headings to output data
Progress:
Process
Error Ratio:
Cancel
Processing Message Log
[12.08.2015 15:01:22] [Batch 01] starting file prepare... Input file: [C:\Temp\data\HRG4_Admitted_Patient_Care_Sample_Test_Data.csv], output file: [C:\Temp\data\output_apc_sample_sort.csv].
[12.08.2015 15:01:23] [Batch 01] input file prepared. Elapsed time: [00:00:01]
[12.08.2015 15:01:23] [Batch 01] starting file processing. Input file: [C:\Temp\data\output_apc_sample_sort.csv], output file: [C:\Temp\data\output_apc_sample.csv].
[12.08.2015 15:01:26] [Batch 01] processing finished. Elapsed time: [00:00:03]
[12.08.2015 15:01:26] [Batch 01] result: Processed 327 records (259 grouped (79.205%), 68 ungrouped (20.795%)
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- Open Windows Explorer and browse to the folder specified for the output file.
- Open the file `output_apc_sample_FCE.csv` in Microsoft Excel. The file is a copy of the input file with HRGs and other related columns appended. Other output files are explained in the Output Files section of this document.

Grouping Your Data

In order to group your own data you need to either:

- Ensure that the structure of your data is identical to that specified in an existing record definition file (RDF), or
- Create an RDF that matches the structure of your data.

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Grouping can be initiated from the graphical user interface (GUI), or from the command line. Whichever approach is used the same input rules, grouper processing and output file structures and content will result.

Another approach for single records and for single admitted patient care (APC) multi-episode spells is to use the Single Spell Grouper, available from the Tools menu. To get an initial appreciation of grouping you are recommended to experiment with the Single Spell Grouper functionality.

Record Definition File (RDF)

The RDF tells the grouper the structure of the data you want it to process. The field content of the RDF must include all mandatory input fields for the type of data you want to group. Although these fields are mandatory, you define their order. You can also include additional fields, which will be ignored by the grouper.

The easiest way to create an RDF is to use the Wizard.

Using the Record Definition File Wizard to Create a Custom RDF

- Select **Open RDF Editor** from the **Tools** menu.
- Select the required **Database** (the type of input file with which the RDF will be used).
- You can choose to **Create manually**, which uses the RDF Editor discussed in the following section, or **Create from file** which uses an input data file to base the RDF on.
- Select **Create from file**, click the browse button (folder icon), and in the **Open CSV File...** dialog box browse to and select your input data file, and click **Proceed**.

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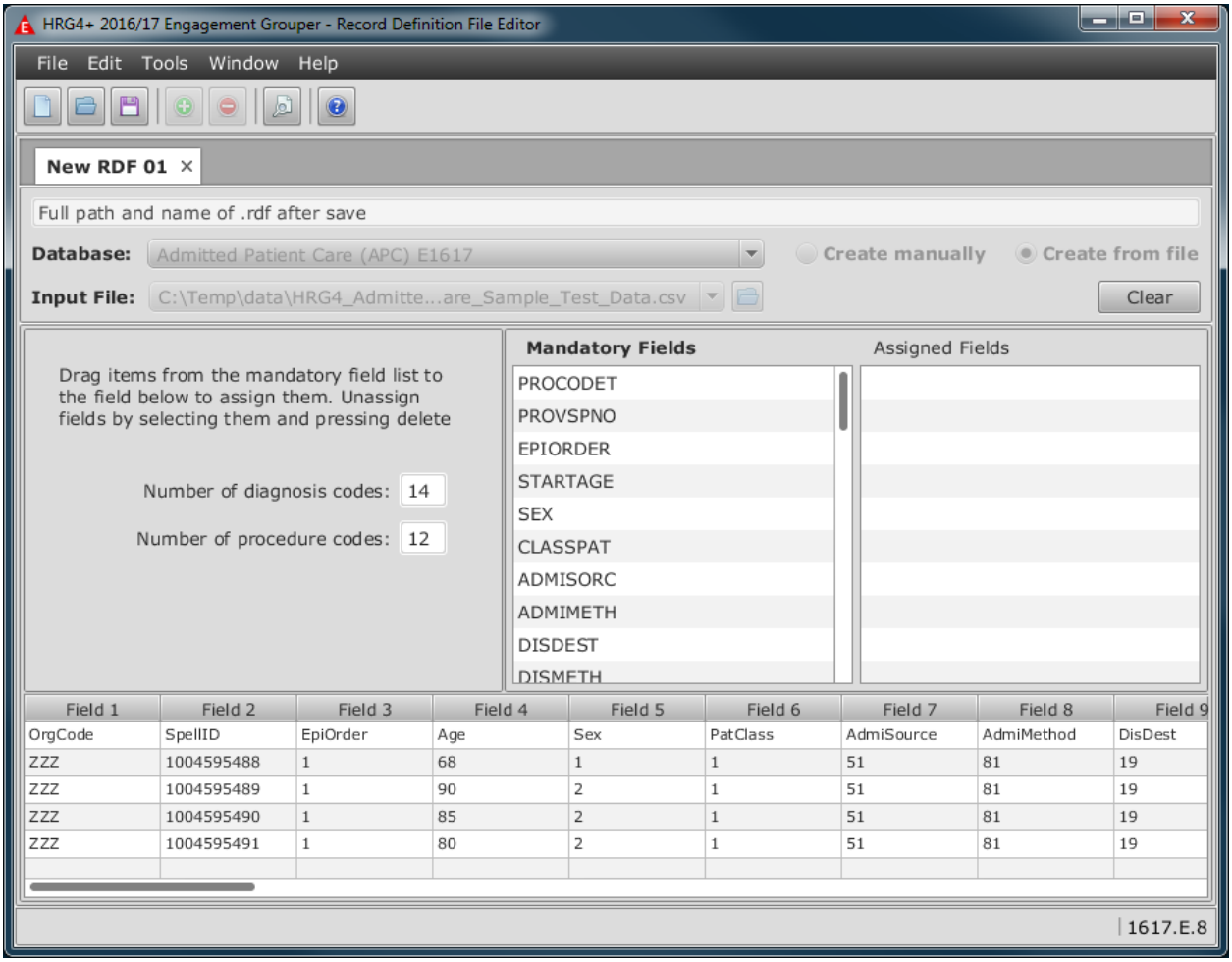
HRG4+ 2016/17 Engagement Grouper - Record Definition File Editor
File Edit Tools Window Help
New RDF 01
Full path and name of .rdf after save
Database: Admitted Patient Care (APC) E1617
Create manually
Create from file
Input File: C:\Temp\data\HRG4_Admitte...are_Sample_Test_Data.csv
Clear
Drag items from the mandatory field list to the field below to assign them. Unassign fields by selecting them and pressing delete
Number of diagnosis codes: 14
Number of procedure codes: 12
Mandatory Fields
Assigned Fields
PROCODET
PROVSPNO
EPIORDER
STARTAGE
SEX
CLASSPAT
ADMISORC
ADMIMETH
DISDEST
DISMETH
Field 1 Field 2 Field 3 Field 4 Field 5 Field 6 Field 7 Field 8 Field 9
OrgCode SpellID EpiOrder Age Sex PatClass AdmiSource AdmiMethod DisDest
ZZZ 1004595488 1 68 1 1 51 81 19
ZZZ 1004595489 1 90 2 1 51 81 19
ZZZ 1004595490 1 85 2 1 51 81 19
ZZZ 1004595491 1 80 2 1 51 81 19
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The first few rows of the selected input file are shown in the preview area in the lower part of the form. At this stage each field is assigned a temporary field name (e.g. Field 1, Field 2).

Depending on the data type, the number of repeating occurrences of certain fields can be increased or decreased. For example, if the input file contains 20 diagnosis codes, the value in **Number of diagnosis codes** should be set to 20 rather than the default value of 14.

All field names in the **Mandatory Fields** list must be assigned to fields in the sample input file. Fields are assigned by using the mouse to drag the field name from the **Mandatory Fields** list to the appropriate field in the preview area. Fields move from the **Mandatory Fields** list to the **Assigned Fields** list as they are assigned.

Multiple fields can be selected by clicking with the mouse while holding down the SHIFT and/or CTRL keys. The selected fields can then be dragged to the preview area.

If a field is erroneously assigned, it can be removed by selecting it in the **Assigned Fields** list and pressing the Delete key. The field will then appear at the bottom of the **Mandatory Fields** list.

When all mandatory fields have been assigned the RDF can be saved by selecting the appropriate option from the **File** menu.

Record Definition File Editor

Choosing to **Create Manually**, or selecting **Open RDF...** from the **File** menu, presents a different view of a record definition file.

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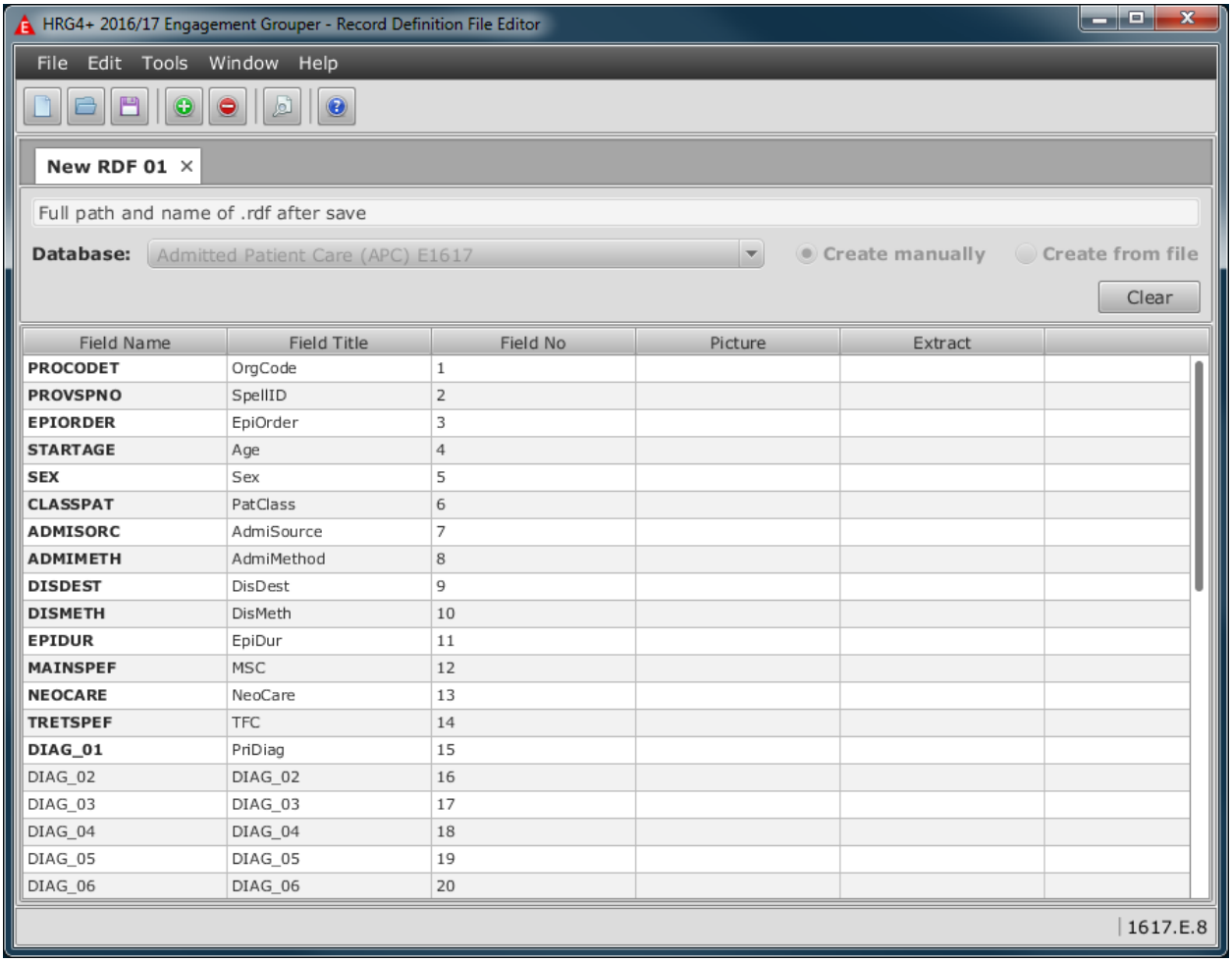
HRG4+ 2016/17 Engagement Grouper - Record Definition File Editor
File Edit Tools Window Help
New RDF 01
Full path and name of .rdf after save
Database: Admitted Patient Care (APC) E1617
Create manually
Create from file
Clear
Field Name | Field Title | Field No | Picture | Extract
PROCODET | OrgCode | 1
PROVSPNO | SpellID | 2
EPIORDER | EpiOrder | 3
STARTAGE | Age | 4
SEX | Sex | 5
CLASSPAT | PatClass | 6
ADMISORC | AdmiSource | 7
ADMIMETH | AdmiMethod | 8
DISDEST | DisDest | 9
DISMETH | DisMeth | 10
EPIDUR | EpiDur | 11
MAINSPEF | MSC | 12
NEOCARE | NeoCare | 13
TRETSPEF | TFC | 14
DIAG_01 | PriDiag | 15
DIAG_02 | DIAG_02 | 16
DIAG_03 | DIAG_03 | 17
DIAG_04 | DIAG_04 | 18
DIAG_05 | DIAG_05 | 19
DIAG_06 | DIAG_06 | 20
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The editor allows you to modify field positions and field attributes in an RDF. The RDF columns are:

Name	Description
Field Name	A field name abbreviation for internal use; it cannot be modified.
Field Title	A field description which can be edited to display a locally-defined field name.
Field No	The field column number in the input file.
Picture	Specifies whether specific character positions in the field are used or ignored during processing. It must be specified as a string of “A” and “.” where “A” means keep the character in that position and “.” means ignore the character in that position. For example: “AAA.A” means ignore the 4th character and process characters in positions 1,2,3 and 5 as if it is a 4 character code, so that W58.1 gets processed as W581. Note that it is no longer necessary to use Picture to remove full stops from procedure and diagnosis codes because these now get removed automatically.
Extract	Allows you to specify that specific characters (in any position) in the field are ignored during processing. For example “.” (without quote marks) will remove all full stops from the field.

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The **Insert Field** toolbar button or **Edit** menu option inserts a new field in the RDF. This feature is provided so that non-mandatory fields can be shown using the **Display File** feature. For the purposes of grouping, it is not necessary for the RDF to specify the position of all fields in the input file. Only mandatory fields need to be specified.

The **Remove Field** toolbar button or **Edit** menu option removes a non-mandatory field from the RDF. Mandatory fields cannot be deleted.

Command Line Initiation

"Command line" refers to the character-based command shell user interface within Microsoft Windows, commonly known as the DOS Window. The Grouper can process a file using the command line with parameters shown below. Mandatory parameters are enclosed within <angle brackets>; optional parameters are enclosed within [square brackets]. All parameters consist of a hyphen followed by a lower-case letter.

The command line takes the following form:

```
hrg-grouperc.exe –i <Input File> -o <Output File> -d <Record
Definition File> -l <Grouping Logic> [-h] [-t] [-?]
```

Command line parameters:

`-i` The path and filename of the **i**nput file.

`-o` The path and filename of the **o**utput file.

`-d` The path and filename of the record **d**efinition file.

`-l` The grouping **l**ogic. The available values are: APC, ACC, EM, NAC, PCC, NRD, NCC.

`-h` Optional. Where present, indicates that the input file has a **h**eader row (field names). Omit this parameter where the first row in the file is a data row.

`-t` Optional. Where present, stops generation of field names in the **t**op row of the output file. If this parameter is omitted then each of the output files will contain a header row.

`-?` Optional. Where present, directs the Grouper to list the available command line parameters to the `hrg.log` file (which may be in the Grouper's installation folder or a folder called `hrg4-grouper-profile-E1617` in your user profile, depending on how your Windows is configured). This parameter cannot be combined with other parameters.

Where there are spaces in paths or filenames for parameter values, the parameter value must be enclosed within double-quote characters.

An example script using the command line is:

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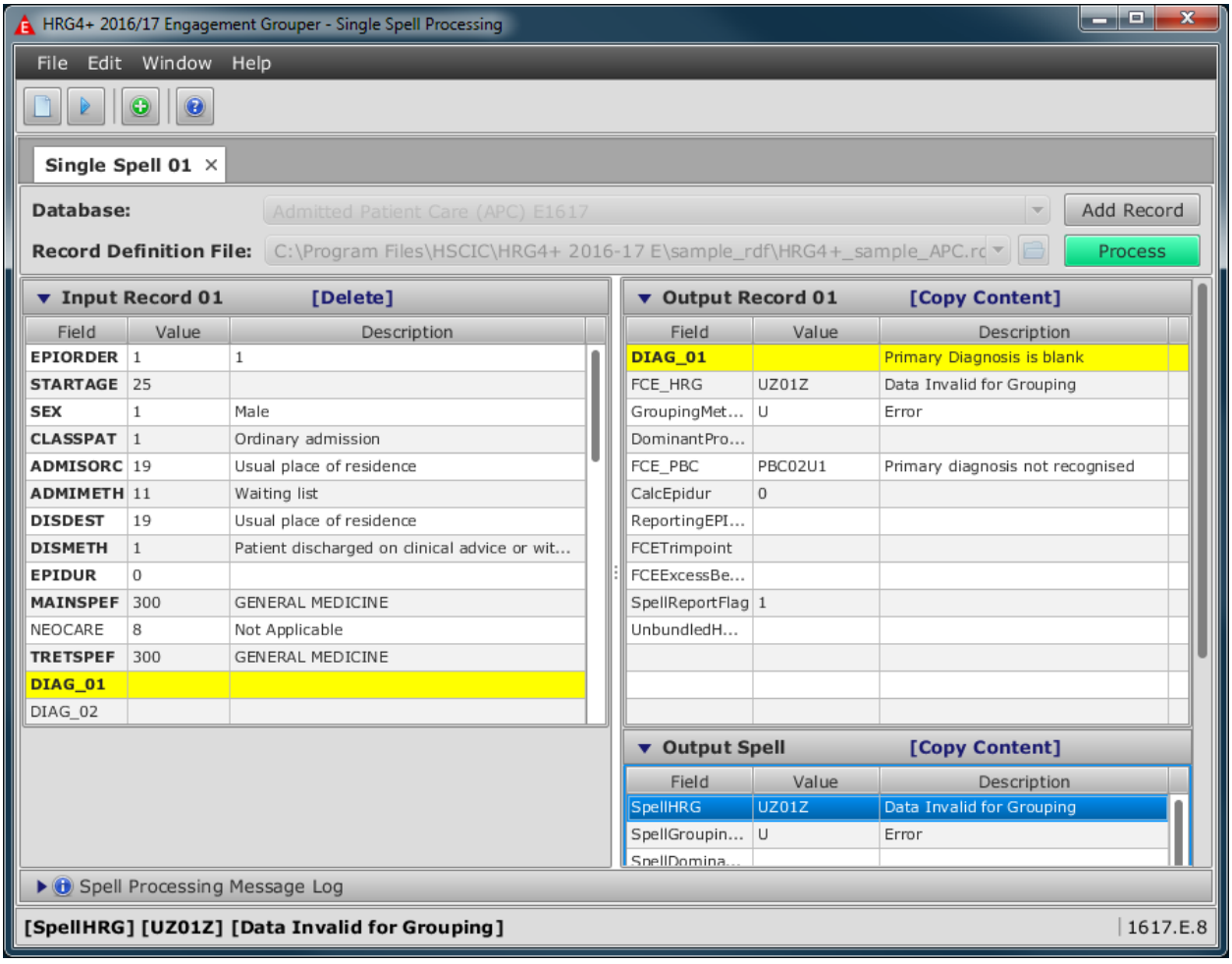
```
@echo off
C:
cd "\Program Files\HSCIC\HRG4+ 2016-17 E"
hrg-grouperc.exe -i "C:\Temp\data\apc.csv" -o
"C:\Temp\data\output.csv" -d "HRG4+_sample_APC.rdf" -l APC -h
IF %ERRORLEVEL% NEQ 0 echo Error in command, please check hrg.log
Pause
```

Additional Features

Single Spell Grouping

Single spell grouping enables the grouping of manually input data. This can be useful when exploring how certain combinations of clinical codes lead to different HRGs being derived. It can be accessed from the toolbar button or by selecting **Open Single Spell Processing** from the **Tools** menu.



Once a **Database** and **Record Definition File** have been selected you can **Add Record**. For Admitted Patient Care it is possible to build up a spell consisting of multiple episodes by adding further records.

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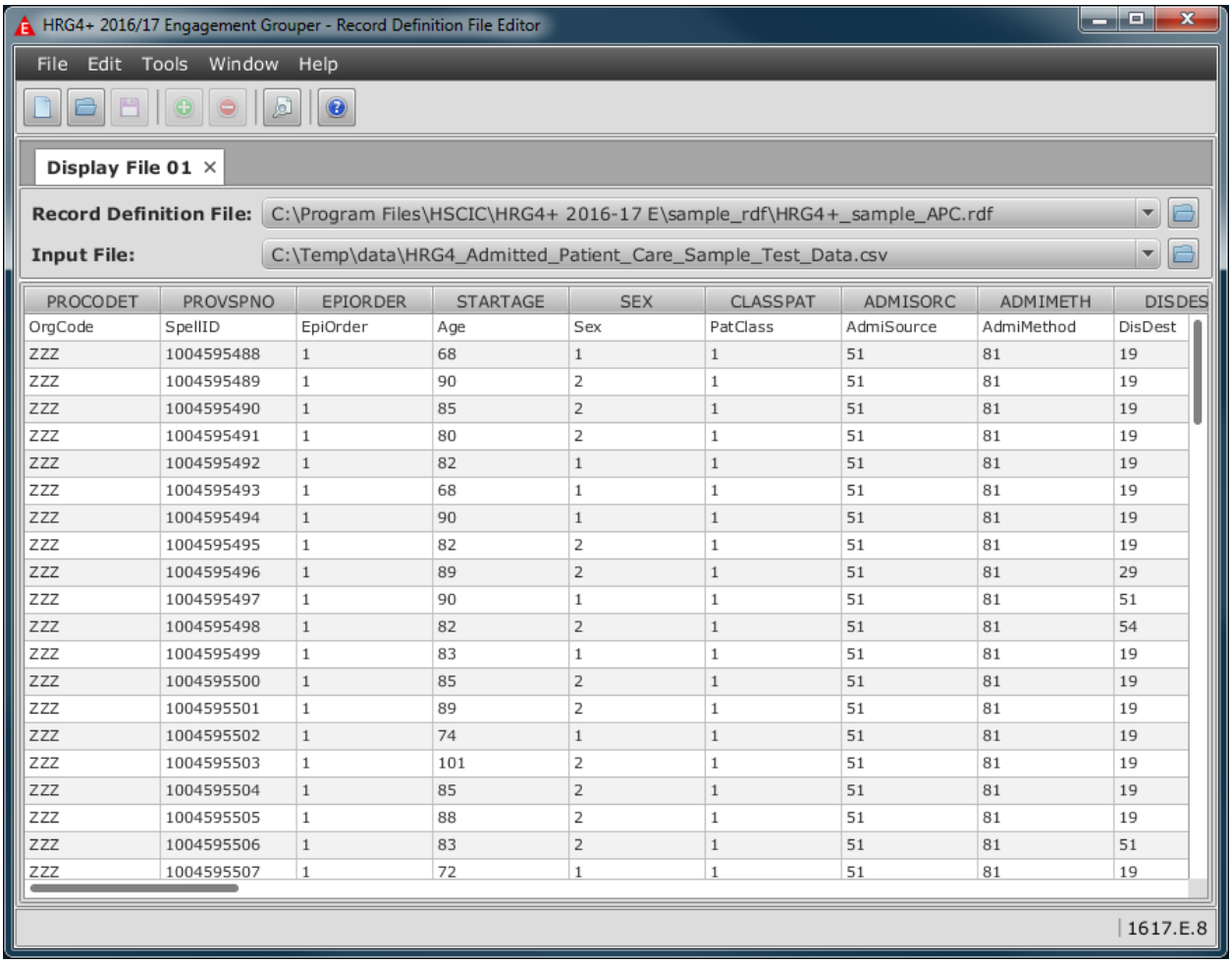
Some fields are populated with useful values to save some data input effort, and the user can edit these and populate other fields as appropriate. The output values will be updated to reflect any changes.

Any errors are highlighted in yellow in both the Input and Output sections.

The content of any row in the input or output sections will be displayed in the status bar at the bottom of the window when selected.

The Internal File Viewer

The Grouper provides a file viewer which can be used to view input or output files. To access the file viewer select **Display File** from the **Tools** menu in the **RDF Editor**.



Selecting a **Record Definition File** and an **Input File** will display the input file data organised into the columns specified in the RDF.

Input File Preparation

This section provides guidance about preparing input files for processing with the Grouper.

Note

Unless otherwise stated, the values in each field are validated against enumerated sets of values – generally based on NHS Data Dictionary definitions.

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File Format

Input data must be in comma-separated value (CSV) format using the American Standard Code for Information Interchange (ASCII) character set, excluding the non-printing ASCII characters. The input file must not include qualifiers, such as quotes, surrounding the fields.

Using Excel for File Preparation

If some of the records end with empty fields then a file structure issue can arise when saving a text file using Microsoft Excel (for more information please refer to Microsoft Article ID 77295 “Column delimiters are missing in an Excel spreadsheet that is saved as text” [http://support.microsoft.com/default.aspx?scid=77295]). To prevent this issue arising, ensure that the final (rightmost) column of data is populated for every record in the file with “dummy data” such as “x”.

Admitted Patient Care (APC)

The Grouper sorts APC data prior to processing so that records with the same Provider Code and Provider Spell Number are placed in Episode Number order.

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	CDS/DD Field Name	Notes
PROCODET	ORGANISATION CODE (CODE OF PROVIDER)	A value must be supplied but is not validated. For NHS organisations use the first 3 characters, for non-NHS organisations use all 5 characters.
PROVSPNO	HOSPITAL PROVIDER SPELL NUMBER (or alternative)	A value must be supplied but is not validated. It is possible to use an alternative spell identifier as PROVSPNO, in place of the Hospital Provider Spell Number.
EPIORDER	EPISODE NUMBER	Duplicates within a spell will create an error.
STARTAGE	Derived	Whole years rounded down: START DATE (EPISODE) – PERSON BIRTH DATE
SEX	PERSON GENDER CODE CURRENT	Must be the same for all episodes in a spell.
CLASSPAT	PATIENT CLASSIFICATION CODE	Must be the same for all episodes in a spell.
ADMISORC	SOURCE OF ADMISSION CODE (HOSPITAL PROVIDER SPELL)	Must be the same for all episodes in a spell.
ADMIMETH	ADMISSION METHOD CODE (HOSPITAL PROVIDER SPELL)	Must be the same for all episodes in a spell.

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Grouper Field Name	CDS/DD Field Name	Notes
DISDEST	DISCHARGE DESTINATION CODE (HOSPITAL PROVIDER SPELL)	
DISMETH	DISCHARGE METHOD CODE (HOSPITAL PROVIDER SPELL)	
EPIDUR	Derived	Range: 0-99999. Whole days: END DATE (EPISODE) – START DATE (EPISODE)
MAINSPEF	CARE PROFESSIONAL MAIN SPECIALTY CODE	
NEOCARE	NEONATAL LEVEL OF CARE CODE	May be blank.
TRETSPEF	ACTIVITY TREATMENT FUNCTION CODE	
DIAG_01	PRIMARY DIAGNOSIS (ICD)	Valid ICD-10 code. If this field is blank an error will be generated.
DIAG_02 - DIAG_99	SECONDARY DIAGNOSIS (ICD)	As above, but blank allowed.
OPER_01 - OPER_99	PRIMARY PROCEDURE (OPCS) and PROCEDURE (OPCS)	Valid OPCS-4 codes or blank.
CRITICALCAREDAYS	Derived	Range: 0-99999 or blank. Count of distinct days within the episode when the patient was in Critical Care. If the patient was in Critical Care on the last day of an episode that was not the last episode of the spell, assign that day to the next episode.
REHABILITATIONDAYS	LENGTH OF STAY ADJUSTMENT (REHABILITATION)	Range: 0-99999 or blank.
SPCDAYS	LENGTH OF STAY ADJUSTMENT (SPECIALIST PALLIATIVE CARE)	Range: 0-99999 or blank.

Non-Admitted Consultations (NAC)

Non-admitted consultations are outpatient attendances or attendances by patients for nursing care on a ward (ward attenders). Since 1 April 2005 the Outpatient Attendance CDS has contained both of these types of data.

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The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field name	CDS/DD Field Name	Notes
STARTAGE	Derived	Whole years rounded down: APPOINTMENT DATE – PERSON BIRTH DATE
SEX	PERSON GENDER CODE CURRENT	
MAINSPEF	CARE PROFESSIONAL MAIN SPECIALTY CODE	
TRETSPEF	ACTIVITY TREATMENT FUNCTION CODE	
FIRSTATT	FIRST ATTENDANCE CODE	
OPER_01 - OPER_99	PRIMARY PROCEDURE (OPCS) and PROCEDURE (OPCS)	Valid OPCS-4 codes or blank.

Each row of the input file represents a single attendance.

Diagnosis Codes

Diagnostic coding is excluded from the HRG4+ algorithm for non-admitted consultations.

Emergency Medicine (EM)

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	CDS/DD Field Name	Notes
AGE	Derived	Whole years rounded down: ARRIVAL DATE – PERSON BIRTH DATE Validated, but not used in grouping.
AEPATIENTGROUP	A AND E PATIENT GROUP	May be blank.

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Grouper Field Name	CDS/DD Field Name	Notes
INV_01 - INV_99	ACCIDENT AND EMERGENCY INVESTIGATION – FIRST and ACCIDENT AND EMERGENCY INVESTIGATION – SECOND	Valid national code component (always 2 characters) or blank. The "Local Sub-Analysis" part should not be submitted. Leading zeroes must be included where they form part of the national code component.
TREAT_01 - TREAT_99	ACCIDENT AND EMERGENCY TREATMENT – FIRST and ACCIDENT AND EMERGENCY TREATMENT – SECOND	Valid national code component (2 or 3 characters) or blank. The "Local Sub-Analysis" part should not be submitted. Leading zeroes must be included where they form part of the national code component.

Each row of the input file represents one Accident and Emergency Attendance.

Renal Dialysis (NRD)

Renal Dialysis HRGs are generated using fields from the National Renal Dataset.

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	DD Field Name	Notes
RENALMOD	RENAL TREATMENT MODALITY CODE	Leading zeros are significant.
RENALSITE	RENAL TREATMENT PRIMARY SUPERVISION CODE	Leading zeros are significant.
RENALACCESS	RENAL DIALYSIS ACCESS TYPE	Leading zeros are significant.
HBV	HEPATITIS B ANTIGEN STATUS (RENAL CARE)	Must be UPPER CASE. Accepted values are NEG, POS and UNK.
HCV	HEPATITIS C ANTIBODY STATUS (RENAL CARE)	Must be UPPER CASE. Accepted values are NEG, POS and UNK.
HIV	HUMAN IMMUNODEFICIENCY VIRUS STATUS (RENAL CARE)	Must be UPPER CASE. Accepted values are NEG, POS and UNK.

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Grouper Field Name	DD Field Name	Notes
AGE	Derived	The age of the patient in whole years at the start date of the session. Range: 0-130.

Each row of the input file represents either one haemodialysis session or one day of peritoneal dialysis.

Adult Critical Care (ACC)

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	CDS/DD Field Name	Notes
CCUF	CRITICAL CARE UNIT FUNCTION	Leading zeros are significant.
BCSD	BASIC CARDIOVASCULAR SUPPORT DAYS	Range: 0-99999.
ACSD	ADVANCED CARDIOVASCULAR SUPPORT DAYS	Range: 0-99999.
BRSD	BASIC RESPIRATORY SUPPORT DAYS	Range: 0-99999.
ARSD	ADVANCED RESPIRATORY SUPPORT DAYS	Range: 0-99999.
RSD	RENAL SUPPORT DAYS	Range: 0-99999.
NSD	NEUROLOGICAL SUPPORT DAYS	Range: 0-99999.
DSD	DERMATOLOGICAL SUPPORT DAYS	Range: 0-99999.
LSD	LIVER SUPPORT DAYS	Range: 0-99999.
CCL2D	CRITICAL CARE LEVEL 2 DAYS	Range: 0-99999.
CCL3D	CRITICAL CARE LEVEL 3 DAYS	Range: 0-99999.
CC_Start_Date	CRITICAL CARE START DATE	Format is YYYYMMDD. e.g. 14 March 2015 = 20150314.
CC_Discharge_Date	CRITICAL CARE DISCHARGE DATE	Format is YYYYMMDD. e.g. 14 March 2015 = 20150314.

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Critical Care Start Date and Critical Care Discharge Date fields are used to calculate critical care days in the Grouper output file. They are not used in HRG derivation.

Each row of the input file represents one Adult Critical Care Period.

Paediatric Critical Care (PCC)

The Grouper sorts Paediatric Critical Care data prior to grouping so that records with the same provider code and local identifier are placed in activity date order.

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	CDS/DD Field Name	Notes
PROCODET	ORGANISATION CODE (CODE OF PROVIDER)	A value must be supplied but is not validated. For NHS organisations use the first 3 characters for non-NHS organisations use all 5 characters.
CCLocalID	CRITICAL CARE LOCAL IDENTIFIER	This and the provider field are the key that keeps records for the same patient together. They must be supplied.
CCDate	ACTIVITY DATE (CRITICAL CARE)	Format is YYYYMMDD. e.g. 14 March 2014 = 20140314.
DISDATE	CRITICAL CARE DISCHARGE DATE	Format is YYYYMMDD. e.g. 14 March 2014 = 20140314.
DISMETH	DISCHARGE METHOD CODE (HOSPITAL PROVIDER SPELL)	
CCUF	CRITICAL CARE UNIT FUNCTION	Leading zeros are significant.
CCAC_01	CRITICAL CARE ACTIVITY CODE	Valid CCAC code from list in Paediatric Critical Care Minimum Dataset (PCC MDS). If this field is blank an error will be generated.
CCAC_02 - CCAC_20	CRITICAL CARE ACTIVITY CODE	May be blank.
OPER_01 - OPER_20	HIGH COST DRUGS (OPCS)	Valid OPCS-4 codes or blank. The PCC MDS specifies two appropriate procedure codes only.
DIAG_01 - DIAG_99	PRIMARY DIAGNOSIS (ICD) and SECONDARY DIAGNOSIS (ICD)	Valid ICD-10 codes or blank.

Each paediatric critical care day is represented by a data row in the input file. Where a child moves between units with different Critical Care Unit Function Codes, a new critical care

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period starts; this may result in the generation of more than one critical care record for the day of transfer and consequently more than one HRG for that day.

Neonatal Critical Care (NCC)

The Grouper sorts Neonatal Critical Care prior to grouping so that records with the same provider code and local identifier are placed in activity date order.

The field list below shows the fields required by the Grouper. The field order of the input file is defined by the Record Definition File used for the grouping session; there is no significance to the order in which the fields are listed below.

Grouper Field Name	CDS/DD Field Name	Notes
PROCODET	ORGANISATION CODE (CODE OF PROVIDER)	A value must be supplied but is not validated. For NHS organisations use the first 3 characters for non-NHS organisations use all 5 characters.
CCLocalID	CRITICAL CARE LOCAL IDENTIFIER	This and the provider field are the key that keeps records for the same patient together. They must be supplied.
CCDate	ACTIVITY DATE (CRITICAL CARE)	Format is YYYYMMDD. e.g. 14 March 2014 = 20140314.
DISDATE	CRITICAL CARE DISCHARGE DATE	Format is YYYYMMDD. e.g. 14 March 2014 = 20140314.
CCUF	CRITICAL CARE UNIT FUNCTION	Leading zeros are significant.
AGE_DAYS	Derived	Whole days, rounded down: ACTIVITY DATE (CRITICAL CARE) - PERSON BIRTH DATE
DISMETH	DISCHARGE METHOD CODE (HOSPITAL PROVIDER SPELL)	
GestLen	GESTATION LENGTH (AT DELIVERY)	
PERWT	PERSON WEIGHT	Kilograms, to 3 decimal places. Range: greater than zero kg and less than 10 kg. Leading zeroes are accepted.
CCAC_01	CRITICAL CARE ACTIVITY CODE	Valid CCAC code from list in Neonatal Critical Care Minimum Dataset. If this field is blank an error will be generated.
CCAC_02 - CCAC_20	CRITICAL CARE ACTIVITY CODE	May be blank.

Each neonatal critical care day is represented by a data row in the input file. Where a baby moves between units with different Critical Care Unit Function Codes, a new critical care period starts; this may result in the generation of more than one critical care record for the day of transfer and consequently more than one HRG for that day.

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Output Files

In the text below and the tables in the following pages, the output file name supplied by the user during processing is referred to as `[name]`; the remainder of the file name is a standard suffix that is appended by the Grouper.

A single input file produces a number of output files. User requirements determine which files are used; some users may not require certain output files. In most cases an output field appears in more than one file thus enabling users to select the files that best suit their needs.

Output files are produced as comma-separated text. These files may be opened with Microsoft Excel but very large files may exceed the maximum number of rows for Excel. In these cases an error message such as "File not loaded completely" will be displayed when attempting to open the file. The output files may be opened with a variety of applications, including Windows Notepad.

Relational Outputs

Relational output files can be identified by the presence of "`_rel`" as part of the filename. They are characterised by the following features:

- They include row number references in order to allow files to be linked.
- Where items are repeated (e.g. unbundled HRGs, Specialised Service Codes, error messages) this is represented by the addition of rows rather than columns – the data is normalised.

The relational output files are supplied to support users who wish to import the Grouper output into a relational database; other users may choose to ignore them – and vice versa.

RowNo Field

RowNo is an identifier that can be used to link rows in output files to rows in other output files. This is particularly useful in the case of the relational output files. Use of a system generated row number avoids problems using input values where they may not be unique.

Note that, depending on the file's role in a relationship with another file, **RowNo** may not contain consecutive values i.e. there may be values missing; this is by design. For example, the **RowNo** values in the `[name]_spell_rel.csv` file will contain non-consecutive values where the input data contains multi-episode spells.

Iteration Field

Iteration appears in some relational output files where it is used to distinguish between occurrences within the same key value. There is no significance to the numerical values of 'Iteration'; the values are assigned in order, being numbered 1, 2, 3 etc.

Admitted Patient Care (APC)

There are thirteen output files.

File Name/Field Name	**Description**
[name].csv	A list of all the other output files.

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File Name/Field Name		**Description**
[name]_sort.csv		A copy of the input data after it has been sorted by Provider Code, Spell Number and Episode Number prior to grouping.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record after sorting. This will match the equivalent fields in other output files from the same grouper run.
[name]_FCE.csv		Contains both episode and spell output fields. The spell fields are repeated for each episode in the spell; care must be taken to avoid double-counting when using spell fields.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	FCE_HRG	The episode HRG.
	GroupingMethodFlag	The grouping method used for the episode. P=Procedure driven, D=Diagnosis driven, M=Multiple trauma, G=Global exception, U=Error.
	DominantProcedure	The dominant procedure.
	FCE_PBC	Programme Budgeting Code for the episode.
	CalcEpidur	The calculated episode duration. This is the input Episode duration minus the number of days in the input fields CRITICALCAREDAYS, REHABILITATIONDAYS and SPCDAYS. If the sum of these deductions is larger than the episode duration, then CalcEpidur will be zero.
	ReportingEPIDUR	Reference Costs Groupers only. For ordinary admissions (Patient Classification = 1) if CalcEpidur is zero days ReportingEPIDUR is set to one day. Otherwise ReportingEPIDUR is the same as CalcEpidur.
	FCETrimpoint	Reference Costs Groupers only. The trimpoint for the episode HRG.
	FCEExcessBeddays	Reference Costs Groupers only. The number of days by which CalcEpidur exceeds the trimpoint.
	SpellReportFlag	Populated with 1 if the episode contains the grouping variable used for deriving the spell HRG (Dominant Episode) or 0 for other episodes in the spell.
	FCESSC_Ct	Reference Costs Groupers only. A count of derived SSCs at episode level.
	FCESSC1 to FCESSC7	Reference Costs Groupers only. SSCs derived at episode level.
	SpellHRG	The spell HRG.
	SpellGroupingMethodFlag	The grouping method used for the spell. P=Procedure driven, D=Diagnosis driven, M=Multiple trauma, G=Global exception, U=Error.

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File Name/Field Name		**Description**
	SpellDominant Procedure	The dominant procedure for the spell.
	SpellPDiag	The primary diagnosis used when spell grouping.
	SpellSDiag	The first secondary diagnosis used when spell grouping.
	SpellEpisodeCount	The number of episodes in the spell.
	SpellLOS	The spell duration used for grouping. This is the total of the CalcEpidur fields for the episodes in the spell.
	ReportingSpellLOS	Reference Costs Groupers only. The total of the ReportingEPIDUR fields for the episodes in the spell.
	SpellTrimpoint	Reference Costs Groupers only. The trimpoint for the spell HRG.
	SpellExcessBeddays	Reference Costs Groupers only. The number of days by which the SpellLOS exceeds the trimpoint.
	SpellCCDays	The number of critical care days in the spell.
	SpellPBC	Programme Budgeting Code for the spell.
	UnbundledHRGs	Variable number of fields containing unbundled HRGs (episode level). There is no significance to the order in which unbundled HRGs are output. For Specialist Palliative Care and Rehabilitation unbundled HRGs, where there is more than one daily HRG the field consists of an HRG followed by an asterisk followed by the number of days, rather than HRG being repeated for every day. For example VC18Z*20 indicates VC18Z for 20 days.
[name]_spell.csv		Contains one row per spell.
	RowNo	Matches the run generated row number.
	PROCODET	The organisation code from the input file.
	PROVSPNO	The hospital provider spell number from the input file.
	SpellHRG	The spell HRG.
	SpellGroupingMethod Flag	The grouping method used for the spell. P=Procedure driven, D=Diagnosis driven, M=Multiple trauma, G=Global exception, U=Error.
	SpellDominant Procedure	The dominant procedure for the spell.
	SpellPDiag	The primary diagnosis used for spell grouping.
	SpellSDiag	The first secondary diagnosis used for spell grouping.
	SpellEpisodeCount	The number of episodes in the spell.
	SpellLOS	The spell duration used for grouping.
	ReportingSpellLOS	Reference Costs Groupers only. The total of the ReportingEPIDUR fields for the episodes in the spell.

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File Name/Field Name		**Description**
	SpellTrimpoint	Reference Costs Groupers only. The trimpoint for the spell HRG.
	SpellExcessBeddays	Reference Costs Groupers only. The number of days by which the SpellLOS exceeds the trimpoint.
	SpellCCDays	The number of critical care days in the spell.
	SpellPBC	Programme Budgeting Code for the spell.
	SpellSSC_Ct	Number of distinct SSCs produced for the spell.
	SpellSSC1to SpellSSC7	Payment Groupers only. Candidate Specialised Service Codes for the spell.
	SpellBP_Ct	Number of distinct BPTs produced for the spell.
	SpellBP1 to SpellBP7	Payment Groupers only. Candidate Best Practice Tariff codes for the spell.
	SpellFlag_Ct	Number of distinct other flags produced for the spell.
	SpellFlag1 to SpellFlag7	Payment Groupers only. Other flags for the spell.
	UnbundledHRGs	Variable number of fields containing unbundled HRGs (spell level). There is no significance to the order in which unbundled HRGs are output. For Specialist Palliative Care and Rehabilitation unbundled HRGs, where there is more than one daily HRG the field consists of an HRG followed by an asterisk followed by the number of days, rather than HRG being repeated for every day. For example VC18Z*20 indicates VC18Z for 20 days.
[name]_quality.csv		Contains a row for each episode that contains an error. Where one or more episodes within a multi-episode spell contain errors, all the episodes from the spell, including those that do not contain errors, are included in the quality file. Thus there are records in the quality file that do not include error messages.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, each consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_FCE_rel.csv		Episode-level output in relational form.
	RowNo	Matches the run generated row number.
	FCE_HRG	The episode HRG.
	GroupingMethodFlag	The grouping method used for the episode. P=Procedure driven, D=Diagnosis driven, M=Multiple trauma, G=Global exception, U=Error.
	DominantProcedure	The dominant procedure.
	FCE_PBC	Programme Budgeting Code for the episode.

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File Name/Field Name		**Description**
	CalcEpidur	The calculated episode duration. This is the input Episode duration minus the number of days in the input fields CRITICALCAREDAYS, REHABILITATIONDAYS and SPCDAYS.
	ReportingEPIDUR	Reference Costs Groupers only. For ordinary admissions (Patient Classification = 1) if CalcEpidur is zero days ReportingEPIDUR is set to one day. Otherwise ReportingEPIDUR is the same as CalcEpidur.
	FCETrimpoint	Reference Costs Groupers only. The trimpoint for the episode HRG.
	FCEExcessBeddays	Reference Costs Groupers only. The number of days by which CalcEpidur exceeds the trimpoint.
	SpellReportFlag	Identifies the dominant episode.
[name]_spell_rel.csv		Spell-level output in relational form; one row per spell.
	RowNo	Matches the run generated row number.
	PROCODET	The organisation code from the input file.
	PROVSPNO	The hospital provider spell number from the input file.
	SpellHRG	The spell HRG.
	SpellGroupingMethod Flag	The grouping method used for the spell. P=Procedure driven, D=Diagnosis driven, M=Multiple trauma, G=Global exception, U=Error.
	SpellDominant Procedure	The dominant procedure for the spell.
	SpellPDiag	The primary diagnosis used when spell grouping.
	SpellSDiag	The first secondary diagnosis used when spell grouping.
	SpellEpisodeCount	The number of episodes in the spell.
	SpellLOS	The spell duration used for grouping.
	ReportingSpellLOS	Reference Costs Groupers only. The total of the ReportingEPIDUR fields for the episodes in the spell.
	SpellTrimpoint	Reference Costs Groupers only. The trimpoint for the spell HRG.
	SpellExcessBeddays	Reference Costs Groupers only. The number of days by which the SpellLOS exceeds the trimpoint.
	SpellCCDays	The number of critical care days in the spell.
	SpellPBC	Programme Budgeting Code for the spell.
[name]_quality_rel.csv		Relational format includes a row for each error for each episode.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.

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File Name/Field Name		**Description**
	Code	The value of the code that has failed validation. Blank where the code is missing from the input data.
	Error Message	Description of the error.
[name]_flag_rel.csv		This file is populated by Payment Groupers only.
	RowNo	Matches the run generated row number.
	PROCODET	The organisation code from the input file.
	PROVSPNO	The hospital provider spell number from the input file.
	Iteration	The ordinal number of the SSC, BPT or other flag.
	SpellFlag	Includes all distinct Specialised Service Codes (SSCs), Best Practice Tariff (BPT) codes and other flags generated for the spell.
[name]_FCE_flag_rel.csv		This file is populated by Reference Costs Groupers only.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the SSC.
	FCEFlag	Includes all distinct Specialised Service Codes (SSCs).
[name]_ub_rel.csv		The unbundled HRGs. There are no entries for episodes that do not have any unbundled HRGs.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the unbundled HRG.
	UnbundledHRGs	The unbundled HRGs. There is no significance to the order in which unbundled HRGs are output. For Specialist Palliative Care and Rehabilitation, HRGs are generated on a per diem basis, so there will be a row for each day.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	Version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	FCE Count	The number of episodes submitted.
	Spell Count	The number of spells submitted.
	FCE Error Count	The number of episodes having errors.
	Spell Error Count	The number of spells having errors.
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.

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File Name/Field Name		**Description**
	Type	Contains one of three values: APC-E – Episode level aggregates, APC-S – Spell level aggregates, APC-U – Unbundled HRG aggregates.
	Provider	The PROCEDET input field.
	HRG	The FCE_HRG, SpellHRG or UB_HRG output fields as appropriate for the Type.
	TretSpef	The TRETSPEF input field. For APC-S type it is the TRETSPEF of the dominant episode in the spell.
	ClassPat	The CLASSPAT input field. For APC-S type it is the CLASSPAT of the first episode in the spell.
	AdmiMeth	The ADMIMETH input field. For APC-S type it is the ADMIMETH of the first episode in the spell.
	TrimPoint	
	Mean LOS	The mean of the input EPIDUR.
	Adj Mean LOS	The mean of the output CalcEPIDUR.
	Inlier Beddays	The sum of the output CalcEPIDUR or SpellLOS minus the output FCEExcessBedDays or SpellExcessBeddays as appropriate.
	Excess Beddays	The sum of the output FCEExcessBeddays or SpellExcessBeddays as appropriate.
	Count	The count of episodes, spells or records.

Non-Admitted Consultations (NAC)

There are nine output files.

File Name/Field Name		**Description**
[name].csv		A list of other output files.
[name]_attend.csv		The main grouped output file.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record.
	NAC_HRG	The attendance HRG.
	GroupingMethodFlag	Grouping method used. P=Procedure driven, G=Global exception, O=Outpatient default, U=Error
	DominantProcedure	The dominant procedure.
	AttendSSC_Ct	The count of distinct SSCs produced for the attendance.
	AttendSSC1 to AttendSSC5	Not currently populated.
	AttendBP_Ct	The count of distinct BPT flags produced for the attendance.
	AttendBP1 to AttendBP5	Not currently populated.
	AttendFlag_Ct	The count of distinct other flags produced for the attendance.

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File Name/Field Name		**Description**
	AttendFlag1 to AttendFlag5	Not currently populated.
	UnbundledHRGs	A variable number of fields containing unbundled HRGs appended to the end of each record. There is no significance to the order in which unbundled HRGs are output.
[name]_quality.csv		Contains a row for each attendance that contains errors.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_attend_rel.csv		Output in relational form.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	NAC_HRG	The attendance HRG.
	GroupingMethodFlag	Grouping method used. P=Procedure driven, G=Global exception, O=Outpatient default, U=Error.
	DominantProcedure	The dominant procedure.
[name]_quality_rel.csv		All error messages in relational form.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_flag_rel.csv		This file is not currently populated.
	RowNo	
	Iteration	
	AttendFlag	
[name]_ub_rel.csv		The unbundled HRGs. There are no entries for attendances without unbundled HRGs.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the unbundled HRG.
	UnbundledHRGs	The unbundled HRGs. There is no significance to the output order.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	Attendance Count	The number of records submitted.
	Attendance Error Count	The number of records having errors.
	Run Start Date/Time	The date and time that the grouping session started.

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File Name/Field Name		**Description**
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains one of two values: NAC – Attendance aggregates, NAC-U – Unbundled HRG aggregates.
	Provider	Blank.
	HRG	The NAC_HRG or UB_HRG output fields as appropriate for the Type.
	TretSpef	The TRETSPEF input field.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.
	Mean LOS	Blank.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of attendances or records.

Emergency Medicine (EM)

There are six output files.

File Name/Field Name		**Description**
[name].csv		A list of other output files.
[name]_attend.csv		The main grouped output file.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record.
	EM_HRG	The attendance HRG.
[name]_quality.csv		Contains a row for each input record that contains errors.
	<input data>	All of the input data including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_quality_rel.csv		All error messages in relational form.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.

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File Name/Field Name		**Description**
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	Attendance Count	The number of records submitted.
	Attendance Error Count	The number of records having errors.
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains the value EM.
	Provider	Blank.
	HRG	The EM_HRG.
	TretSpef	Blank.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.
	Mean LOS	Blank.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of attendances.

Renal Dialysis (NRD)

There are six output files

File Name/Field Name		**Description**
[name].csv		A list of other output files.
[name]_renal.csv		The main grouped output file.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record.

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File Name/Field Name		**Description**
	NRD_HRG	The HRG for the dialysis record.
[name]_quality.csv		Contains one row for each record that contains errors.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_quality_rel.csv		All error messages in relational form.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	NRD Record Count	The number of records submitted.
	NRD Record Error Count	The number of records having errors.
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains the value NRD.
	Provider	Blank.
	HRG	The NRD_HRG.
	TretSpef	Blank.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.
	Mean LOS	Blank.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of records.

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Adult Critical Care (ACC)

There are six output files.

File Name/Field Name		**Description**
[name].csv		A list of other output files.
[name]_acc.csv		The main grouped output file.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record.
	ACC_HRG	The unbundled HRG for the Adult Critical Care period.
	Calc_CC_Days	The number of Critical Care days calculated as: CC Discharge Date - CC Start Date + 1 This will be set to -1 if there are problems with the dates.
	CC_Warning_Flag	Flag to indicate the result of validation of dates and respiratory support days fields. Failure does not prevent HRG derivation. Blank indicates passing validation. F indicates date validation failure; applied if any of the following are true: Calc_CC_Days = -1. (This indicates that CC Discharge Date is before CC Start Date, or CC Start Date or CC Discharge Date is blank, is not a valid date or does not match the required format.) CCL2 Days + CCL3 Days > Calc_CC_Days ARSD + BRSD > Calc_CC_Days ARSD + BRSD > CCL2 Days + CCL3 Days
[name]_quality.csv		Contains a row for each input record that contains errors.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_quality_rel.csv		All error messages in relational form.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	ACC Period Count	The number of records submitted.
	ACC Period Error Count	The number of records having errors.

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File Name/Field Name		**Description**
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains the value ACC.
	Provider	Blank.
	HRG	The ACC_HRG.
	TretSpef	Blank.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.
	CC Days	The output Calc_CC_Days field.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of periods.

Paediatric Critical Care (PCC)

There are seven output files.

File Name/Field Name		**Description**
[name].csv		A list of other output files.
[name]_sort.csv		A copy of the input data after it has been sorted.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	The generated row number of the record after sorting.
[name]_pcc.csv		The main grouped output file.
	<input data>	All of the input data including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	PCC_HRG	The unbundled HRG for the Paediatric Critical Care day.
[name]_quality.csv		Contains one row for each record that contains errors.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_quality_rel.csv		All error messages in relational form.

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File Name/Field Name		**Description**
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	PCC Record Count	The number of records submitted.
	PCC Record Error Count	The number of records having errors.
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains the value PCC.
	Provider	The PROCEDET input field.
	HRG	The PCC_HRG.
	TretSpef	Blank.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.
	CC Days	Always 1, for single day PCC records.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of records.

Neonatal Critical Care (NCC)

There are seven output files.

File Name/Field Name	**Description**
[name].csv	A list of other output files.
[name]_sort.csv	A copy of the input data after it has been sorted.

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File Name/Field Name		**Description**
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Generated row number of the record after sorting.
[name]_ncc.csv		The main grouped output file.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	NCC_HRG	The unbundled HRG for the Neonatal Critical Care day.
[name]_quality.csv		Contains one row for each record that contains errors.
	<input data>	All of the input data, including any non-mandatory fields.
	RowNo	Matches the run generated row number.
	Error Message	A variable number of fields, consisting of Code Type, Code and Error Message, separated by pipe (|) symbols.
[name]_quality_rel.csv		All error messages in relational form.
	RowNo	Matches the run generated row number.
	Iteration	The ordinal number of the quality message.
	Code Type	The type of code that has failed validation.
	Code	The code that failed validation. Blank if code missing from input data.
	Error Message	Description of the error.
[name]_summary.csv		A single-row file containing details about the grouping session.
	Grouper Version	The version of the Grouper that produced the output files.
	Database Version	The Grouper's internal HRG database version.
	NCC Record Count	The number of records submitted.
	NCC Record Error Count	The number of records having errors.
	Run Start Date/Time	The date and time that the grouping session started.
	Run End Date/Time	The date and time that the grouping session finished.
	Input Filename	The path and filename of the input file.
	Output Filename	The path and filename selected by the user.
	RDF path and name	The path and filename of the Record Definition File used for grouping.
[name]_report.csv		An aggregated report file. This file is produced by Reference Costs Groupers only.
	Type	Contains the value NCC.
	Provider	The PROCEDET input field.
	HRG	The NCC_HRG.
	TretSpef	Blank.
	ClassPat	Blank.
	AdmiMeth	Blank.
	TrimPoint	Blank.

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File Name/Field Name		**Description**
	CC Days	Always 1, for single day NCC records.
	Adj Mean LOS	Blank.
	Inlier Beddays	Blank.
	Excess Beddays	Blank.
	Count	The count of records.

Errors and Validation

As part of the grouping process the Grouper carries out validation checks on many of the mandatory input fields. Where one or more fields fail validation the Grouper derives the HRG UZ01Z (Data Invalid for Grouping).

For single-episode spells, where the episode fails validation, the error HRG is derived at both episode and spell level.

For multi-episode spells that contain a mixture of episodes that pass validation and episodes that fail validation, the error HRG is derived for each episode that fails validation and at spell level.

Details of all errors are reported in the output quality file. The listings in the Output Files section of this document include a description of the quality file for each of the data types processed by the Grouper. The Input File Preparation section provides further information about valid values for various input fields.

Details of clinical coding validation can be found in the chapter summary documentation for chapter **UZ Undefined Groups** which is available for download from the Casemix website.

Error Message Format

Error messages in the quality file are displayed in three sections, separated by a pipe character:

`Code Type|Code|Error Message`

`Code Type` identifies the field or field type

`Code` is the unrecognised value. Where an error is due to the absence of a code, this section is left blank.

`Error Description` explains the nature of the error

An example error message is:

`ICD|P102|UZ03 - Diagnosis Conflicts with Age in DIAG_01`

Error Types

There are three types of errors:

Field Validation Errors are generated where field values are missing or are outside of the accepted range of values. Example error messages of this type are:

`ICD||Primary diagnosis is blank`

`ICD|XX68|Code not recognised in DIAG_01`

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```
OPCS|C992|Code not recognised in OPER_02
```

Spell Validation Errors result from cross checks across records in a spell. For example, where consistency checks for sex or age fail:

```
SEX||Not the same in all episodes in the spell
```

```
AGE||Falls in FCEs in this Spell
```

Clinical Coding Errors are mainly due to the use of clinical codes that violate clinical coding convention or are not useful resource indicators for HRG grouping.

Clinical coding errors produce error messages that contain the error category codes described in the following section.

Error Categories

Error Categories are used mainly for clinical coding errors. Critical care grouping error descriptions also include error category codes.

UZ01 Invalid Primary Diagnosis

Diagnosis code is present but should not be used in a primary position according to clinical coding conventions.

```
ICD|Z509|UZ01 - Invalid Primary Diagnosis in DIAG_01
```

(Z509: Care involving use of rehabilitation procedure, unspecified)

UZ02 Poorly Coded Primary Diagnosis

Diagnosis code is valid as a primary diagnosis but is too vague to determine the resource use.

```
ICD|T140|UZ02 - Poorly Coded Primary Diagnosis in DIAG_01
```

(T140: Superficial injury of unspecified body region)

UZ03 Diagnosis Conflicts with Age

A paediatric primary diagnosis has been recorded for an adult patient (age 19 years and over).

```
ICD|P704|UZ03 - Diagnosis Conflicts with Age in DIAG_01
```

(P704: Other neonatal hypoglycaemia)

UZ04 Diagnosis Conflicts with Anatomical Site

Indicates an invalid combination of primary diagnosis and anatomical site. This only applies to specific musculoskeletal codes entered at 5th digit level.

```
ICD|M7217|UZ04 - Diagnosis Conflicts with Anatomical Site in
DIAG_01
```

(M7217: Knuckle pads: Ankle and foot)

UZ05 Invalid procedure for Casemix grouping purposes

Indicates invalid dominant procedure (e.g. an anatomical site) and includes the entire Y (methods of operations) and Z (anatomical sites) codes and also a number of codes in the main body system chapters.

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```
OPCS|Y841|UZ05 - Invalid procedure for Casemix grouping purposes
in OPER_02
```

```
OPCS|W450|UZ05 - Invalid procedure for Casemix grouping purposes
in OPER_02
```

(Y841: Gas and air analgesia in labour)

(W540: Conversion from previous prosthetic replacement of articulation of bone NEC)

UZ06 Poorly coded procedure for Casemix grouping purposes

Indicates a dominant or unbundled procedure that is too vague and unspecific to determine resource use from an HRG design perspective.

```
OPCS|A579|UZ06 - Poorly coded procedure for Casemix grouping
purposes in OPER_02
```

```
OPCS|U019|UZ06 - Poorly coded procedure for Casemix grouping
purposes in OPER_01
```

(A579: Unspecified operations on spinal nerve root)

(U019: Unspecified diagnostic imaging of whole body)

UZ11 Neonatal Critical Care Error

This is a general purpose grouping error for Neonatal Critical Care, generated when the input record does not meet any of the criteria in the neonatal critical care grouping algorithm.

UZ12 Paediatric Critical Care Error

This is a general purpose grouping error for Paediatric Critical Care, generated when the input record does not meet any of the criteria in the paediatric critical care grouping algorithm.

UZ13 ACC Grouping Error

This is a general purpose grouping error for Adult Critical Care, generated when the input record does not meet any of the criteria in the adult critical care grouping algorithm.

UZ14 Renal (NRD) Error

This is a general error for grouping renal activity using the national renal dataset and is generated when conditions in the grouping algorithm have not been met.

UZ21 CCAC Inappropriate in NCC

Generated when the Critical Care Activity Code is inappropriate for the Neonatal Critical Care HRG algorithm

UZ22 CCAC Inappropriate in PCC

Generated when the Critical Care Activity Code is inappropriate for the Paediatric Critical Care HRG algorithm

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Notes

When one error is found in a record the Grouper does not stop the validation process. The grouping software aims to identify all errors and output them together.

In Admitted Patient Care errors cascade up to the next level. If an episode HRG is UZ01Z then the spell HRG will be UZ01Z. If an unbundled HRG is UZ01Z then both the episode and the spell HRGs will be UZ01Z. Errors do not cascade downwards, so if one episode gets UZ01Z then it will not stop the other episode HRGs from being generated.

In Admitted Patient Care data Specialised Service Codes and Best Practice Tariff codes are suppressed if the spell HRG is UZ01Z

In Admitted Patient Care data the primary diagnosis is always validated.

All clinical codes are validated against the Grouper's internal database of codes.

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The Documentation Suite

Below is a list of the various documents which are available to download from the National Casemix Office website www.hscic.gov.uk/casemix. It is a comprehensive resource of supporting materials, designed to assist users in understanding the design concepts, logic and practical use of the Grouper.

- The **Casemix Companion** is a starting point and general reference for new and existing users, providing an introduction to HRGs, groupers, HRG4+ design concepts (including worked examples of each one), grouping logic and useful links to further information
- The **Grouper User Manual** provides full instructions on how to prepare and group data using the Grouper software application. This generic document is updated with every new grouper software toolkit released
- The **Summary of Changes** document provides an overview of the main changes between the current grouper design and its predecessor
- The **Chapter Summaries** document provides an overview of the scope, composition and relevant grouping logic of individual subchapters, along with the design concepts incorporated. Also included in the document are updates on the changes within subchapters
- The **Worked Examples** document contains subchapter specific worked examples to highlight how the different types of grouping logic implemented within each subchapter works.
- The **Code to Group Workbook** is a spreadsheet that provides details on all mappings between primary classification (e.g. ICD-10, OPCS-4, A&E codes, etc.) and their respective HRGs. Also detailed within the workbook are the logic conditions required to generate the HRGs
- The **Code to Group User Manual** serves as an introduction to using the Code to Group workbook to perform manual grouping. It also details some basic design concepts and provides worked examples of a variety of different grouping scenarios
- The **Specialised Service Identification Code Sets** is a spreadsheet containing details about how the Grouper allocates specific identification flags relating to specialised services that may attract a national tariff top-up which will then be applied in the National System for Reimbursement (SUS PbR)
- The **Best Practice Guide** is a spreadsheet produced to help users understand how Best Practice flags, which are output by the Casemix Groupers, are generated

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